H.S. John.

Rhodora

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THE NEW ENGLAND BOTANICAL CLUB

Vol. 34. September, 1932. No. 405.

THE IDENTITY OF LYCOPODIUM POROPHILUM

L. R. Wilson

In an attempt to understand the Wisconsin material of *Lycopodium porophilum* Lloyd & Underwood (*L. lucidulum*, var. *porophilum* (L. & U.) Clute) it has become evident that this form has been misinterpreted, and as treated in Gray's Manual and in other manuals contains two elements. These two elements are *L. Selago*, var. *patens* (Beauv.) Desv. and *L. lucidulum*, forma *occidentale* Clute.

The spores of the various North American Lycopods have been studied (paper now in press) and differences were found between those of *L. Selago* and *L. lucidulum*. The spores of true *L. porophilum* have a distinct *L. Selago* pattern, which suggests relationship between these two forms, since all other distinct species examined have characteristic spores.

Herbarium specimens from various parts of North America and Europe were next consulted and found to be confusing until a series of *L. Selago* specimens was constructed to show gradation from the appressed leaves of the variety *appressum* to the less appressed leaves of the type and the wide-spreading aspect of the variety *patens*. Comparison of a fragment of the type specimen of *L. porophilum* with *L. Selago*, var. *patens* shows these two forms to be identical.

During the investigation specimens from New England which had been identified as *L. lucidulum*, var. *porophilum* were obtained from the Gray Herbarium. Examination of the specimens proved them to be a rather distinct form of *L. lucidulum*, the second element confused with the so-called *L. porophilum*. Further comparison with western material has shown these specimens to correspond to *L. lucidulum*, forma *occidentale* Clute. Other specimens of this form have been examined from Minnesota, Wisconsin and Indiana.

The habitats of the eastern and middle western specimens were subalpine or northern. Those of the west were from the bases of the mountains and in the highlands; these habitats appear to correspond with the approximate altitude and ecology of the more eastern stations. In as much as typical *L. lucidulum* is not reported from the western United States it seems justifiable to treat Clute's forma *occidentale* as a variety with definite habitat and range.

Lycopodium lucidulum, var. **occidentale** (Clute), n. comb. *L. lucidulum*, forma *occidentale* Clute, Fern. Bull. **11**: 13. 1903. *L. porophilum* Lloyd & Underwood, Bull. Torr. Bot. Club **27**: 150. 1900, in part but not as to type specimen. *L. lucidulum*, var. *porophilum* Clute, The Fern Allies p. 111. 1905, in part; Gray's Manual edition 7: 55. 1908, in part.

In the east and probably as far southwest as eastern Ohio or Kentucky *L. Selago*, var. *patens* appears as an ecological form found growing in milder conditions at lower altitudes than the type or in mesophytic habitats. In Wisconsin, Indiana and part of Ohio there seems to be another factor that determines the range of this plant. That is Pleistocene isolation. In Wisconsin this plant is restricted almost entirely to the Driftless Area and its border. One exception to this range was recorded by the writer in 1930[1] but re-examination of this specimen shows it to be *L. lucidulum*, var. *occidentale*. However, in 1931 F. H. Knowlton and A. M. Fuller collected one plant of the variety *patens* growing back of a sand bar on Lake Superior at Cornucopia, Bayfield County, Wisconsin. This plant apparently developed from a water-, ice- or wind-carried gemma, the source of which might have been Isle Royale, since that is the closest known station. According to Mr. Fuller of the Milwaukee Public Museum there are other plant affinities at this point in Wisconsin with Isle Royale.

The isolated and marginal distribution of *L. Selago*, var. *patens* to the Driftless Area in Wisconsin is interesting. No station for this plant is known from the interior of that area though there are plenty of suitable habitats. Outside of the Driftless Area there are also suitable habitats but no plant of this species has been discovered except at Cornucopia as noted above. The distribution is very suggestive of the isolation of this subarctic and arctic species probably during the third substage of the Wisconsin glaciation.[2] It may also suggest

[1] Wilson, L. R. Lycopodiaceae and Selaginellaceae of Wisconsin. Trans. Wis. Acad. Sci., Arts & Lett. **25**: 170 & 172. 1930.

[2] Leverett, Frank. Moraines and shore lines of the Lake Superior basin. U. S. Geol. Surv. *Prof. Paper* 154-A p. 19. 1929.

that glacial climate was confined very largely to the border of the Driftless Area and milder conditions were prevailing in the interior of that area where plants of warmer climates could persist. Dr. N. C. Fassett has recorded numerous plants from the Driftless Area of Wisconsin which might have persisted there during the Pleistocene with *L. Selago.*[3] This also seems probable, since the Driftless Area was never at any one time completely surrounded by ice.[4] In Indiana the same relation to glacial boundries is apparent from specimens in the herbarium of C. C. Deam. All recorded stations are south of the drift of the first substage of the Wisconsin glaciation. In Ohio the same conditions appear but are not as well understood. It may be that in that state several other factors have had much to do with the distribution of this species.

There is some conflict in statements as to the type of rock with which this variety is associated. In Gray's Manual the habitat is given as cool calcareous cliffs. Lloyd and Underwood in their description of *L. porophilum* (*L. Selago,* var. *patens*) state that it occurs on sandstone. In Indiana C. C. Deam has collected it on a limestone cliff. In Wisconsin the writer has tested the hydrogen ion concentration of the soil associated with this form at one station and found it to be approximately 6.3. This is a slightly acid soil but a type that could easily result from the leaching of soil on limestone, so it appears that the conflicting habitats recorded in literature cannot be considered too seriously.

In September of 1930 and 1931 plants and gemmae of both *L. lucidulum* and *L. Selago,* var. *patens* were placed in the greenhouse under various controled conditions to have them closer at hand for study. The plants of both species produced new leaves which were characteristic of their respective species. The gemmae of *L. lucidulum* began to grow after seven months and those of *L. Selago,* var. *patens* began a month later. The gemmae that were planted in September, 1931, began growing at the end of two weeks and the roots of both species were covered with a plumose covering of fungus which may have been responsible for the early growth. The development in *L. lucidulum* differs from that of *L. Selago,* var. *patens* in that the shoot is usually about 5 mm. long before two small leaves become distinct.

[3] Fassett, N. C. Notes from the Herbarium of the University of Wisconsin. Rhodora **33**: 224–228. 1931.

[4] Thwaites, F. T. The Driftless Area. Outline of Glacial Geology. Dept. of Geol. Univ. of Wis. p. 148. 1927.

Those following the first two are markedly serrate. In the latter species, leaves are present from the earliest development of the shoot and are entire like those of the mature plant. These characters were checked in the field and in general bore out the laboratory observations. *L. Selago*, var. *patens* always produced its first leaves as described but when *L. lucidulum* was found in exceedingly dry places the shoot was shorter than observed elsewhere. In the two species studied the plants from gemmae could always be distinguished from one another by the serrate or oblanceolate leaves of *L. lucidulum*.

The writer wishes to express his appreciation to Mr. Percy Wilson of the New York Botanical Garden to Mr. C. A. Weatherby of the Gray Herbarium, to Director S. C. Simms of the Field Museum of Natural History, to Mr. H. H. Smith of the Milwaukee Public Museum, to Dr. J. H. Schaffner of the Ohio State University and to Mr. C. C. Deam of Bluffton, Indiana, for the use of specimens and to Dr. N. C. Fassett and Mr. F. T. Thwaites for their helpful criticisms.

KEY TO LYCOPODIUM SELAGO, L. LUCIDULUM AND THEIR VARIETIES

A. Leaves linear-attenuate to lanceolate, entire; spores 32 to 36 mu in diameter, with papillation uniform in size and distribution....B.
  B. Leaves appressed....C.
    C. Leaves not crowded, ascending.....*L. Selago.*
    C. Leaves crowded, much appressed.....*L. Selago*, var. *appressum.*
  B. Leaves spreading, often reflexed.....*L. Selago*, var. *patens.*
A. Leaves oblanceolate, widest near or above the middle, serrate or entire; spores 20 to 26 mu in diameter, with papillation irregular in size and distribution....D.
  D. Leaves serrate.....*L. lucidulum.*
  D. Leaves entire or slightly serrate.....*L. lucidulum*, var. *occidentale.*

DEPARTMENT OF BOTANY,
UNIVERSITY OF WISCONSIN.

THE STATUS OF TWO INTRODUCTIONS BY MINOT PRATT AT CONCORD, MASSACHUSETTS: CAMPTOSORUS RHIZOPHYLLUS AND HELENIUM AUTUMNALE.—Among the botanical papers of the late Walter Deane is a hectograph copy in longhand of a list of "Plants Introduced about Concord, Mass., by the late Minot Pratt," dated March 25, 1898, and probably compiled from Dame & Collins' Flora of Middlesex County. It is in the nature of a circular to members of the New England Botanical Club requesting information concerning the status of any of the

plants enumerated. Mr. Deane particularly wished to learn whether "any show a tendency to spread and become significant components of the local vegetation."

I suspect that a correspondence soon developed with Alfred W. Hosmer, who had become extraordinarily familiar with the botanical rarities of Concord, perhaps through the early stimulus of Pratt himself. In any event, when RHODORA appeared in 1899, Hosmer published an account[1] of his observations regarding the Pratt introductions, a subject in which he had been particularly interested since boyhood. Out of sixty-seven species definitely regarded as introduced during a period extending possibly from 1860–1875, twenty-four were cited as persisting or spreading at the turn of the century. Among these latter is mentioned *Camptosorus rhizophyllus* Link at three stations.

Within the last five years I visited the old lime quarries in the "Esterbrook country" in the northern part of the town where the walking-fern had been set out fifty years earlier. There was still a single specimen hanging in a niche by the skin of its teeth (to use an expressive vulgarism) with every indication of utter discouragement. The entire plant would have rattled around in a match box.

More interesting to me is the appearance of *Helenium autumnale* L. on Hosmer's list of those introductions "which have not been found in recent years" (circ. 1899). I had collected a lone specimen fully twenty years ago in a meadow under the east slope of Nashawtuc Hill. Shortly after the war I was much surprised to find a large colony thoroughly established in this same meadow in an area five or six rods in diameter. Of all the Pratt introductions, I venture to say that it is the most successful, despite Mr. Hosmer's belief to the contrary. However, it is entirely possible that the occurrence of *H. autumnale* at my station is strictly fortuitous, as is probably the case with *H. nudiflorum* Nutt. which on a single occasion I have collected in the same meadow, and sparingly in an abandoned pasture further up the Sudbury River. I find no allusion to *H. nudiflorum* in Pratt's manuscript at the Concord Library, nor in Deane's list, nor in the RHODORA article cited above. It is extremely unlikely that Minot Pratt could have included such a conspicuously different species in a consignment of *H. autumnale* without noting the fact.—RICHARD J. EATON, Boston, Massachusetts.

[1] RHODORA, 1: 168–172.

RECORDS OF UNITED STATES PLANTS, CHIEFLY FROM THE CHICAGO REGION

PAUL C. STANDLEY

THE species listed and annotated below are chiefly plants observed by the writer in the Chicago area, mainly in northwestern Indiana, during 1930 and 1931. Although the records pertain primarily to the local flora, some of the rarer introduced species have a slight historical interest for the whole region covered by Gray's Manual. There are reported, also, a few records based upon material received from correspondents of Field Museum.

ALLIUM STELLATUM Ker.—INDIANA: Between McCool and Porter, Porter County, a large colony on a railroad embankment, August 23, 1930, *Standley* 57456. Doubtless an introduction.

ACNIDA TAMARISCINA (Nutt.) Wood.—This western species is occasional in waste ground and vacant lots in Chicago. Collected August 26, 1930, at Roosevelt Road and Cicero Avenue, *Standley* 57464.

CHENOPODIUM URBICUM L.—Collected at Roosevelt Road and Cicero Avenue, August 26, 1930, *Standley* 57463; also on Chicago Avenue, No. 57459.

This is one of the rarest of the pigweeds in the United States, although plants of *Chenopodium murale* often are mistaken for it. When once seen growing, it never can be confused with the latter. It is not common in Chicago, but it does not seem to be particularly rare.

CORISPERMUM NITIDUM Kit.—In place of the single species of *Corispermum* reported from the Indiana dunes at the foot of Lake Michigan, there evidently are two distinct representatives of the genus that grow in the sand. In September and October it is easy to distinguish them at a glance, and there is also a difference in their dates of flowering. The more abundant species is *C. nitidum* Kit., represented by *Standley* 57478, collected at Ogden Dunes, Porter County, Indiana, October 4, 1930. *C. hyssopifolium* L. is represented by No. 57479 from the same locality. The two plants often grow intermixed in the same colonies.

ERUCASTRUM POLLICHII Schimp. & Spenn.—INDIANA: Porter County, on the west boundary at the crossing of Road 53, September 1, 1930, *Standley* 57469. Only two plants were found, growing on a railroad embankment.

I have seen the plant elsewhere only in Glacier Park, Montana,

but it has been found at several widely separated localities in the United States.

Rosa rubifolia Mill.—This handsome wild rose, if it is a valid species, is rare in the Lake Michigan region, if actually native there. More probably it is a prairie plant. Collected July 5, 1930, in Porter County, Indiana, northeast of Hobart, growing abundantly in fencerows in one locality, and making a handsome display with its abundant flowers, *Standley* 57448.

Baptisia tinctoria L.—Indiana: Gary, Lake County, at Grant Street and Fortieth Avenue, July 5, 1930, *Standley* 57413.

To one familiar with this plant as it grows so plentifully in Maryland and Virginia, for instance, it is rather amusing to find its local occurrence a matter of some interest. The species was reported many years ago from the Chicago region, but had not been detected by recent collectors, and it was suspected that it had become extinct. However, it was found in abundance at the locality indicated, growing in low moist sandy land, and making a really handsome display of flowers. I have not observed it elsewhere in the region.

Coronilla varia L.—Indiana: Crown Point, Lake County, July 19, 1931, *Standley* 57484; roadside at the entrance to the Catholic Cemetery, a large and vigorous colony in the grass.

Lathyrus tuberosus L.—Wisconsin: Lodi, July, 1930, *Miss Emma Richmond.* Sent to Field Museum for determination by Miss Richmond, who states that the plant forms large patches on a railroad embankment, where it has been under observation for seven or eight years.

Cercis canadensis L.—The redbud is plentiful enough in the Mississippi Valley, and is reported to grow throughout Indiana, except in the lake counties. I had not found it near the lake until May 23, 1931, when a few trees were seen from Road 6, in Porter County, 2.6 miles east of the road leading north to McCool. About half a mile south of this spot, on the bank of a small stream, there were four large trees, the largest with a trunk 25 cm. in diameter.

Gaura parviflora Dougl.—A weedy western plant, for which two stations may be reported in the Lake Michigan region: Indiana: East Chicago, plentiful in vacant lots, August 20, 1930, *Standley* 57454. Porter County, east boundary where crossed by Road 53, several plants on and near the railroad embankment, September 1, 1930, No. 57468.

Some of the plants were as much as two meters high. They attract attention because of their curious habit, each individual suggest-

ing a small bushy tree with tall slender trunk and thick symmetrical top.

EUSTOMA RUSSELLIANUM (Hook.) Griseb., f. **Fisheri**, f. nov. A forma typica non nisi corollis albis differt.—TEXAS: Evergreen, June 20, 1931, *George L. Fisher* 5 (Herb. Field Mus., TYPE).

The usual form of this robust plant, with its large, dull blue blossoms, is one of the showiest of North American gentians. It thrives particularly well in strongly saline soil, and especially about gypsum outcrops. The form with white corollas is not particularly rare, and I have seen it on various occasions in New Mexico.

Although it is scarcely a mark of great distinction to have a form named for one, the writer is glad to have this opportunity of recognizing in some manner the work of George L. Fisher, whose deep interest and intense enthusiasm for botanical subjects have led him to assemble during recent years a huge amount of valuable herbarium material.

PHLOX PILOSA L., var. FULGIDA Wherry, f. **albiflora** (MacM.), comb. nov. *P. pilosa* L., f. *albiflora* MacM. Metasp. Minn. Vall. 432. 1892.—ILLINOIS: Near Elgin, July, 1929, *C. F. Groneman.* Growing with the normally colored form of var. *fulgida*, the phase of *Phlox pilosa* occurring about Lake Michigan.

SOLANUM ELAEAGNIFOLIUM Cav., f. **Benkei**, f. nov. Corolla omnino alba.—TEXAS: Near mouth of the Rio Grande, about Brownsville, rare, March 20, 1930, *H. C. Benke* 5209 (Herb. Field Mus., TYPE).

Solanum elaeagnifolium is one of the noxious weeds of the Southwest, invading gardens and other cultivated ground in much the same manner as the common bull-nettle, *Solanum carolinense*, in the Mississippi Valley. The corollas ordinarily are of a handsome shade of azure blue, but plants with pure white corollas occur not infrequently.

LINARIA MINOR (L.) Desf.—INDIANA: Porter County, western border at Road 53, hundreds of plants on the railroad embankment, September 1, 1930, *Standley* 57466, 57467.

The plants were growing on both sides of the road that crosses the railroad at this point, and since this throughfare is the county line, the species may be recorded also for Lake County!

During March and April, 1930, Mr. H. C. Benke made a collecting trip to Louisiana, Arkansas, and Texas, and at the writer's request he gave particular attention to the genus *Houstonia*, which is exceptionally well represented throughout that region. The large series of good specimens that he obtained includes most of the species that occur in

the area visited, and several collections that are of more than casual interest.

Houstonia parviflora Holzinger.—This rare species is represented by a single number that is worthy of record: Texas: Corpus Christi, April 2, 1930, *Benke* 5198. Corollas very small, purple; plants small and spreading.

Houstonia lanceolata (Poir.) Britton, f. **albiflora**, f. nov. A forma typica corollis albis differt.—Arkansas: Mena, high situations in the high mountains, April 20, 1930, *H. C. Benke* 5206 (Herb. Field Mus., type).

At the same locality there were obtained two collections of typical *H. lanceolata*, Nos. 5200 and 5202. In the former the corollas were red-purple; in the latter pale, and almost white.

Houstonia tenuifolia Nutt., f. **leucantha**, f. nov. Corollae albae. —Arkansas: Mena, rocky mountain tops, April 20, 1930, *H. C. Benke* 5207 (Herb. Field Mus., type).

The typical form, represented by Nos. 5201 and 5204 from Bethesda Springs, Arkansas, has light rose-purple or light red-purple corollas. It grows in dry pine woods on mountain sides.

Houstonia pusilla Schoepf, f. **albiflora**, f. nov. A forma typica tantum corollis albis differt.—Louisiana: New Iberia, March 16, 1930, *H. C. Benke* 5191 (Herb. Field Mus., type), 5194.

The ordinary form of the species, with blue corollas, was growing at the same locality, the two forms in separate colonies. *Houstonia pusilla* was collected also at Fisher and Lake Charles, Louisiana, Mena, Arkansas, and Corpus Christi, Texas.

LATHYRUS JAPONICUS VERSUS L. MARITIMUS

M. L. Fernald

The Beach Pea has been so universally known as *Lathyrus maritimus*, either of Bigelow, "(L.) Bigelow" or (L.) Fries, that the change of name forced upon it by the alteration in the International Rules of Nomenclature adopted in 1930 seems at least unfortunate. By the original International Rules *L. maritimus* might be maintained as the correct name; but, with the intrusion into the Rules of the principle that the publication of a name (even though it be a taxonomic synonym or otherwise unavailable) prevents the transfer into the genus of an earlier published species under an identical trivial or specific name,

the combination *L. maritimus* has to be excluded and we must take up for the Beach Pea of Europe, North and South America and Asia the name *L. japonicus* Willd. The situation, both taxonomically and nomenclaturally, is confused and in order that the discussion of these matters may be as clear as possible it is necessary first to define the entities involved. The following synopsis of the chief varieties of this circumpolar (or circumboreal) species gives the leading diagnostic characters.

a. Stems 1–3 (rarely –10) dm. long, 0.5–2.5 mm. thick (in dried specimens): leaflets thin, submembranaceous, green and not strongly glaucous; the better developed ones (on each plant) 1–4 (–5) cm. long, 0.7–2.5 cm. broad; tendrils mostly simple: peduncles filiform, 0.5–1.5 mm. thick, often equaling or exceeding the subtending leaves: corolla 1.8–3 cm. long . . . *b.*

b. Plant glabrous or essentially so throughout . . . *L. japonicus* (var. *typicus*).

b. Plant more or less pubescent; the stem, lower leaf-surfaces, peduncles, pedicels and calyx all or nearly all densely pilose. Var. *aleuticus.*

a. Stems 0.2–1.5 m. or more long, 2–5 mm. thick (in dried specimens): leaflets subcoriaceous or fleshy, glaucous; the better developed ones (on each plant) 2–7 cm. long, 1.5–4 (in the rare forma *acutifolius* down to 0.5) cm. wide; tendrils mostly forking: peduncles stoutish, 1–2 mm. thick, definitely shorter than the subtending leaves: corolla 1.5–2.5 cm. long . . . *c.*

c. Stems and leaves glabrous or sparsely pilose and glabrate: rachis (of raceme), pedicels and calyx glabrous (or calyx-lobes merely ciliolate) . . . *d.*

d. Leaflets elliptic or obovate, 1.5–4 cm. broad . . . . . Var. *glaber.*

d. Leaflets elliptic-lanceolate, acute, 0.5–1 cm. broad. Var. *glaber,* forma *acutifolius.*

c. Stems (at least above), lower surfaces of leaflets, peduncles, rachises, pedicels and calices densely pilose . . . . . Var. *pellitus.*

L. JAPONICUS Willd., var. **typicus.** *L. pisiformis* Houttuyn, Pfl. Syst. viii. 608, t. 65, fig. 1 (1782), not L. (1753). *L. japonicus* Willd. Sp. Pl. iii². 1092 (1803). *L. maritimus,* var. *Thunbergianus* Miquel, Ann. Mus. Bot. Lugd.-Bat. iii. 45—reprinted as Prol. Fl. Jap. 233 (1867).—Northeastern Siberia and Alaska, south to Japan, northeastern China and Oregon; very locally also in Greenland and Labrador and in southern Chile. The following are characteristic. GREENLAND: Igaliko, 1906, *Chr. Deichmann.* LABRADOR: Chateau Bay, July 14, 1891, *Bowdoin College Exped.,* no. 58. ALASKA: Kuskokwim R., 1884, *Weinmann;* Attu Island, June 26, 1873, *W. H. Dall;* Akutan, *E. C. Van Dyke,* no. 320, in part (mixed with var. *aleuticus*); Karluk, *C. Rutter,* no. 73; mouth of Ankow R., *Funston,* no. 20; Burroughs Bay, *Walker,* no. 1014. WASHINGTON: Golden Gardens, Seattle, *J. W. Thompson,* no. 5247; Roft R., *Conard,* no. 324. OREGON: mouth of Columbia R., June, 1886, *Henderson;* mouth of Chetco R., June, 1884, *Howell.* SIBERIA: Karaginok (collector unknown). JAPAN: Simoda, *C. Wright;* Zenibako, July, 1882, *Takenobu;* Iwanai, July, 1882,

Takenobu; Atoika, near Kusuri, July 2, 1884, *Miyabe;* Nagasaki, *Oldham*, no. 365; Yokohama, 1862, *Maximowicz.* KOREA: Port Hamilton, 1859, *Wilford;* Korean Archipelago, 1863, *Oldham.* CHILE: Port Melinka, November 23, 1868, *Cunningham* (not quite typical).

Southward in the Northern Hemisphere passing to var. *glaber:* northward, in subarctic and arctic areas, more generally represented by

Var. **aleuticus** (Greene), n. comb. *Pisum maritimum* L. Sp. Pl. ii. 727 (1753), in small part (Lapland plant). *L. maritimus aleuticus* Greene in T. G. White. Bull. Torr. Bot. Cl. xxi. 450 (1894).—Southern Greenland, Labrador, arctic and subarctic northwestern America, arctic northeastern Siberia, and arctic Europe, south to Newfoundland, eastern Saguenay Co., Quebec, James Bay (northern Ontario), southern Alaska and southern Kamtchatka. The following belong here. GREENLAND: Julianehåb, 1855, *Rink,* 1889, *Hartz;* Igdlorssuit, Prins Christians Sund, 60° 10′ N., *A. E. & M. P. Porsild.* LABRADOR: Nain, *Sornborger,* no. 220; Assizes Harbor, *C. S. Sewall,* no. 186; Cape Harrigan, *Bishop,* no. 404[a]; Windy Tickle, *Bishop,* no. 404[b]; Manak's Island, *Bishop,* no. 405; Mallijak, *Sornborger,* no. 221; Hopedale, *Bowdoin College Exped.* no. 223; Red Islands, *Bishop,* no. 404; Gready Island, *Bishop,* no. 406; Hawkes Harbor, *Abbe & Hogg,* no. 464; Petty Harbor, *Bishop,* no. 407; Rodney Mundy Island, *Abbe & Hogg,* no. 465; Lake Melville, *Bowdoin College Exped.* no. 117; Rigolet, *Wetmore,* Nat. Herb. Can., no. 102,993; Northwest River, *Wetmore,* Nat. Herb. Can. no. 102,994; White Bear River, *Woodworth,* no. 294; Battle Harbor, *Bowdoin College Exped.* no. 92; Battle Island, July 23, 1913, *Ekblaw;* Dumpling Harbor, July 16, 1864, *B. P. Mann;* Red Bay, *Bowdoin College Exped.* no. 24; Forteau, *Fernald & Wiegand,* no. 3642. NEWFOUNDLAND: Baccalieu Island, June 28, 1902, *Sornborger;* Barred Islands, August 13, 1903, *Sornborger;* Isthmus Cove, Pistolet Bay, *Wiegand, Gilbert & Hotchkiss,* no. 28,631; Flower Cove, *Fernald, Long & Dunbar,* no. 26,812; Grassy Island, St. John Bay, *Fernald, Long & Fogg,* no. 1839 (with forking tendrils of var. *glaber*); Port à Port, *Mackenzie & Griscom,* no. 10,333. QUEBEC: Archipel Ouapitagone, *St. John,* Herb. Geol. Surv. Can. no. 90,573; east coast of Hudson Bay, June 24, 1896, *Low.* ONTARIO: Moose Factory, Hudson Bay, *W. Haydon,* no. 36. ALASKA: Nome, *C. N. Powers,* no. 13; Golovin Bay, 1881, *J. Muir;* Unakakleet, Norton Sound, *Johnston & Palmer,* no. 12; Fort St. Michael, Norton Sound, 1865–66, *Bannister;* St. Paul Island, August, 1893, *C. H. Townsend;* Unimak Island, *Muric,* no. 65; Dutch Harbor, Unalaska, *Van Dyke,* nos. 8, 107; Atka Island, 1880, *Turner;* Nazan Bay, Atka Island, *Van Dyke,* no. 236; Kyska Island, July 4, 1873, *Dall;* Kodiak Island, *ex Acad. Petrop.;* Sitka, 1865–66, *Fisher.* SIBERIA: Arakamtchetchene Island, Bering Straits, *C. Wright;* Copper Island and Bering Island, *Stejneger,* no. 211; Bering I., July, 1891, *Grebnitsky;* Kamtchatka, *Beechy Voyage;* Petropavlovsk, June 3, 1928,

Eyerdam. Russian Lapland: "Lapponia," *Schrenck;* Gross Renntier Insel (or Bolschoj Olenij Ostrow), Kola-Fjord, July 7, 1927, *A. Tolmatchew.* Norway: "prope Uvebakken Finmarkia occidentalis." *Blytt.*

Var. *aleuticus*, characterized by its dense pubescence, is, it will be noted, the northernmost extreme of the species. While all the material of *L. japonicus* at hand from Japan, Washington and Oregon is glabrous, nearly all the material from Kamtchatka, Alaska, Labrador and Greenland is definitely pubescent, and all which I have seen from Newfoundland and from arctic Europe is also pubescent. The typical glabrous form of *L. japonicus* is sometimes found with var. *aleuticus* in Kamtchatka, Alaska, Greenland and Labrador, but it is there decidedly exceptional; but var. *aleuticus* is, very evidently, the common extreme in the subarctic and arctic floras. This conclusion is supported by Hultén's statement in regard to the inclusive *L. maritimus:* "The hairiness of the species varies a good deal, here [in Kamtchatka] as well as in other parts of its area. . . . On the whole, more northern specimens are more hairy, although this is not always the case."[1] Then Hultén adds: "Most of our [Kamtchatka] specimens should be referred to f. *velutinus* Fr."

The latter comment suggests that Fries had a forma *velutinus*, but I have been unable to find a satisfactory diagnosis of it. In 1846, in a tabulation of the Scandinavian occurrence of vascular plants, Fries used for a Lapland plant the name *Lathyrus maritimus*, var. *velutinus* Fries, Summa Veg. Scand. 46 (1846), a *nomen nudum*, quite without characterization. By inference, since Fries referred to a Lapland plant, it might be assumed that he had the arctic and subarctic extreme which I am here calling *L. japonicus*, var. *aleuticus;* but, unless his var. *velutinus* was published elsewhere with a diagnosis, the name cannot stand. Greene's *L. maritimus*, var. *aleuticus* was well described, with "stipules and leaflets thin, pubescent on the lower surface," "A fairly constant variety of the North Pacific coasts," and it rests upon definite type material.

Just as typical glabrous *Lathyrus japonicus* is represented southward by the coarser and thick-leaved, glaucous, shorter-peduncled and smaller-flowered var. *glaber*, so var. *aleuticus* gives way on the Atlantic coast of North America to var. *pellitus*, which, on the coast from the lower St. Lawrence to New Jersey, entirely replaces it and is much more common than the smooth var. *glaber*.

[1] Hultén, Fl. Kamtch. and Adj. Isl. iii. 115 (1929).

Var. **glaber** (Ser.), n. comb. *Pisum maritimum* L. Sp. Pl. ii. 727 (1753), for the most part. *P. dasigynum* Raf. Am. Mo. Mag. iv. 194 (1819). *L. maritimus* Bigel. Fl. Bost. ed. 2: 268 (1824), as a new species, not based on *Pisum maritimum* L. but purposely (though erroneously) differentiated from it. *P. maritimum, β. glabrum* Ser. in DC. Prodr. ii. 368 (1825). *L. californicus* Dougl. in Lindl. Bot. Reg. xiv. t. 1144 (1828). *Orobus maritimus* (L.) Reichenb. Fl. Germ. Excurs. 538 (1832). *L. maritimus* (L.) Fries, Fl. Scand. 106 (1835), direct transfer of *Pisum maritimum* L. *L. maritimus,* var. *glaber* (Ser.) Eames, Rhodora, xi. 95 (1909).—Temperate coasts of northwestern Europe from Finland, Sweden and Norway to Germany, Holland, Belgium, northwestern France, (Spain?), and the British Isles; Atlantic coast of North America from Newfoundland (lat. 50°) and the lower St. Lawrence (inland to the Isle of Orleans), Quebec, south to Long Island; inland on Lake St. John (Quebec), Oneida Lake (New York), the Great Lakes (southern Ontario, northern and western New York, northern Ohio, northern Indiana, Michigan, northern Illinois, Wisconsin and Minnesota), and Lake Winnipeg and the Lower Saskatchewan R. (Manitoba); Pacific North America from southern British Columbia to Humboldt Co., California; Japan. The following, selected from a very large series, are characteristic. Newfoundland: Cow Head, *Fernald & Wiegand,* no. 3641; Shag Cliff, Bonne Bay, *Fernald, Long & Fogg,* no. 1841; French (or Tweed) Island, Bay of Islands, *Fernald, Long & Fogg,* no. 309. Quebec: Marten River, Gaspé Co., *Fernald & Pease,* no. 25,173; Tadousac, August 7, 1892, *G. G. Kennedy;* Ile-aux-Couleuvres, Lac St.-Jean, *Victorin,* no. 16,092; Ste. Anne de Kamouraska, *Svenson & Fassett,* no. 2013; Ile à Deux Têtes, *Victorin,* no. 25,524; St.-Laurent de l'Ile d'Orleans, *Victorin,* no. 16,093. Magdalen Islands: Alright Island, *Fernald, Long & St. John,* no. 7701; Ile du Hâvre-aux-Maisons, *Victorin & Rolland,* no. 9704. New Brunswick: Miscou Island, *Blake,* no. 5585; Shediac, July 4, 1914, *F. T. Hubbard;* Quaco, *Fassett,* no. 2284; Harvey, *Fassett,* no. 2283. Nova Scotia: Yarmouth, *Howe & Lang,* no. 7; Sand Beach, *Fernald & Linder,* no. 21,724. Maine: Perry, *Fernald,* no. 1954; Brooklin, *A. F. Hill,* no. 629; Deer Isle, *Hill,* no. 2094; Camden, July 12, 1902, *G. G. Kennedy;* Monhegan Island, *Jenney, Churchill & Hill,* no. 3199; Wells, July 14, 1894, *Parlin.* New Hampshire: Newcastle Island, September 19, 1901, *E. F. Williams;* Rye, *B. L. Robinson,* no. 694. Massachusetts: Plum Island, August 4, 1899, *E. F. Williams;* Gloucester, June 7, 1896, *Rand & Robinson;* Revere, *Pease,* nos. 766, 7755; Weymouth, July 29, 1928, *Knowlton;* Plymouth, *Fernald, Hunnewell & Long,* no. 9755; Harwich, *Fernald & Long,* no. 16,697; Chilmark, 1891, *S. Harris.* Rhode Island: Newport, *Mearns,* no. 594; South Kingston, June 11, 1927, *Bill & Emerton;* Westerly, August 21, 1913, *Bissell, Harger & Weatherby;* Block Island, *Fernald & Long,* no. 9754. Connecticut: Old Lyme, June 13, 1912, *Blewitt;* Saybrook Point, September 7, 1908, *Blewitt.* New York: Flushing,

Long Island, June 21, 1887, *Poggenburg;* Oneida Lake, *Haberer*, no. 2623; Lake Ontario, Woodville, *House*, no. 8175; L. Ontario, Sterling, *Whetzel*, no. 12,341. Pennsylvania: Presqu' Isle, Erie Co., *Pease*, no. 12,977, *Dickey*, no. 28. Ontario: Pt. Abino, June 15, 1901, *ex Biltmore Herb.;* Stevens Point, *MacMillan & Sheldon*, no. 1264. Ohio: Lake Erie, Ashtabula Co., September 12, 1914, *MacDaniels;* Lake Erie, Lake Co., August 12, 1922, *R. J. Webb.* Indiana: Lake Michigan, Edgemoor, *Lansing*, no. 2596. Michigan: Lake Huron, near Port Huron, July 23, 1899, *C. K. Dodge;* Lake Superior, Keweenaw Co., *Farwell*, no. 750; Lake Michigan, Stevensville, *Lansing*, no. 3232. Wisconsin: Lake Michigan, Door Co., *E. J. Palmer*, no. 28,805. Minnesota: Grand Marais, *Rosendahl & Butters*, no. 4669. Manitoba: Lake Winnipeg Valley, 1857, *Bourgeau;* Saskatchewan R. 1857–8, *Bourgeau.* British Columbia: District of Renfrew, Vancouver Island, *Rosendahl & Butters*, no. 52; Nitinat Lake, west coast of Vancouver I., *W. R. Carter*, no. 139. Washington: San Juan Islands, *S. M. & E. B. Zeller*, no. 908; Pt. Ludlow, September 15, 1890, *F. Binns;* Bellingham Bay, Whatcom Co., *Suksdorf*, no. 1823 (transition to var. *typicus*). Oregon: Fidalgo Island, 1858, *Lyall;* Curry Co., *M. E. Peck*, no. 8746 (transition to var. *typicus*). California: "N. W. Am.," *L. californicus* Dougl. cult. at Kew; Eureka, Humboldt Co., *Tracy*, no. 3736. Japan: Jahikari, Hokkaido, September 10, 1903, *Arimoto.* Latvia: nördlich v. dem Kriedshafen bei Libau, *Grøntred*, no. 088. Sweden: Ystad, Sc. austo. *Ringius;* Tobbisborg, Skåne, July 17, 1928, *Asplund.* Norway: Klaŭver in Insö, July 7, 1925, *Resvoll-Holmsen.* Germany: Baltic sea near Warnemünde, *Detharding* in Fl. Germ. Exsicc. no. 350, *Griewank* in F. Schulz, Herb. Norm, no. 774. France: St. Valery, Somme Distr., July, 1849, *Cosson.* England: Kingsdown, Kent, June 15, 1837, *N. B. Ward*, August 17, 1907, *Raine;* Walmer, Kent, September, 1860, *John Stuart Mill.* Ireland: Rosbigh, Kerry, *Andrews*, no. 311.

Var. glaber, forma **acutifolius** (Bab.), n. comb. *L. maritimus*, β. *acutifolius* Bab. Man. Brit. Bot. 82 (1843).

Originally described from Unst, Shetland Islands: "Leaflets elliptic-lanceolate, acute, petioles straight, stems slender, straggling." I have seen no authentic material, but since Hooker, describing *L. maritimus* as "Glaucous, glabrous" (Hook. Stud. Fl. Brit. Isl. 104 (1870)) and Syme, similarly describing it "glabrous and glaucous" (Engl. Bot. ed. Syme, iii. 110 (1874)) both include var. *acutifolius* under it, without indication that it is not glabrous, I take var. *acutifolius* to be a form with narrow and acute leaflets such as rarely occurs within the normal range of the var. *glaber.* The only American material I have seen is from Newfoundland: White Point, Bonne Bay, *Fernald, Long & Fogg*, no. 1840.

Var. **pellitus**, n. var., a var. glabro differt caulibus foliorum paginis inferioribus stipulis pedunculis rhachibus pedicellis calycibusque plerumque dense pilosis.—More common than var. *glaber* on the coast of North America from Newfoundland and the Gulf of St. Lawrence to New Jersey, inland on Lake St. John (Quebec) and Lake Champlain (Vermont); in Atlantic America commonly mistaken for typical *L. maritimus*. The following, from a very large representation, are characteristic. NEWFOUNDLAND: Dildo Run, Notre Dame Bay, *Fernald, Wiegand & Bartram*, nos. 5805, 5806; Ship Cove, Avalon Peninsula, 1928, *Agnes M. Ayre;* Great Barachois (or Barasway Bay), *Fernald, Long & Fogg*, no. 310; Grassy Island, St. John Bay, *Fernald, Long & Fogg*, no. 1838; Wild Cove, Bay of Islands, *Fernald & Wiegand*, no. 3640. ST. PIERRE ET MIQUELON: Anse à Henry, St. Pierre, *Arsène*, no. 321. QUEBEC: Ile à Marteau, Archipel de Mingan, *Victorin & Rolland*, no. 18,476; Clarke City Landing, *Fernald & Long*, no. 28,630; Moisie R., *P. W. Bowman*, no. 226; St. Alphonse, Ha-Ha Bay, Saguenay R., August 5, 1902, *E. F. Williams;* Baie de St. Prime, Lac St.-Jean, *Victorin*, no. 16,091; Cap à l'Aigle, *J. Macoun*, no. 66,817; Rivière du Loup, *Victorin*, no. 94; Ilet Brulé, Bic, *Rousseau*, no. 26,625; La Peninsule, Baie de Gaspé, *Victorin, Rolland, Brunel & Rousseau*, no. 17,249. MAGDALEN ISLANDS: Wolf Island (Pointe du Loup), *Fernald, Bartram, Long, & St. John*, no. 7700; Brion Island, *St. John*, no. 1918. NEW BRUNSWICK: St. Andrew's, June 28, 1900, *J. Fowler*. NOVA SCOTIA: St. Paul Island, *Perry & Roscoe*, no. 271 (TYPE in Gray Herb.); Bird Island, Cape Breton, *Nichols*, no. 584; Baddeck, *J. Macoun*, no. 19,056; Pictou, *Howe & Lang*, no. 480; Pembroke Shore, *Fernald & Linder*, no. 21,721; Sable Island, *St. John*, nos. 1265, 1266. MAINE: Moose Island, Passamaquoddy Bay, *Fernald*, no. 1958; Roque Bluffs, July 17, 1913, *Knowlton;* Little Duck Island, July 16, 1901, *Rand;* Swan's Island, *A. F. Hill*, no. 749; Matinicus, June 12, 1919, *C. A. E. Long;* Harpswell, *J. E. Dinsmore*, no. X264; Great Chebeague Island, *Fernald*, no. 1953; Kittery, *Fernald & Long*, no. 13,969. VERMONT: Lake Champlain, Burlington, June 14, 1897, *Eggleston;* South Burlington, June 26, 1912, *Knowlton;* Maquam Bay, Lake Champlain, Swanton, *S. F. Blake*, no. 3204. MASSACHUSETTS: Rockport, *L. B. Smith*, no. 651; Plymouth, September 2, 1911, *R. A. Ware;* Swansea, *S. N. F. Sanford*, no. 10,091; Bourne, *F. S. Collins*, no. 2846; Dennis, June 10, 1916, *Hunnewell & Blake;* Provincetown, *Fernald & Long*, no. 18,643; Penikese, *Fogg*, no. 1432; Cuttyhunk, *Fogg*, no. 2263. RHODE ISLAND: Tiverton, *E. A. Mearns*, no. 284; Little Compton, *S. N. F. Sanford*, no. 10,037; Westerly, August 31, 1919, *Weatherby & Collins;* Block Island, *Fernald & Long*, no. 9753. CONNECTICUT: Guilford, June 14, 1906, *G. H. Bartlett;* Madison, *Eames & Godfrey*, no. 8742; Stratford, *Blewitt*, no. 1747; Fairfield, August 22, 1898, *Eames*. NEW YORK: Fisher's Island, *St. John*, no. 2773; Riverhead, *St. John*, no. 2774. NEW JERSEY: Woodbridge, July, 1887, *Lighthipe*.

Var. *pellitus* may possibly occur throughout the range of var.

glaber. European descriptions, not distinguishing between the arctic *L. japonicus*, var. *aleuticus* and the more southern var. *glaber*, often define *L. maritimus* as glabrous or pubescent, though in descriptions based solely on the southern extreme in Europe, like those of Hooker and of Syme (cited in the discussion of forma *acutifolius*), we find the common European plant described as "glabrous." I have seen no convincing material of var. *pellitus* from Europe, temperate Asia, Pacific North America nor the Great Lakes, in most (or all) of which areas var. *glaber* is abundant. On the coast from the Maritime Provinces of Canada to Long Island var. *pellitus* is the common Beach Pea, the collections made in this area, without special selection, by botanists of the past century and represented in the herbaria before me showing 108 sheets of var. *pellitus*, 70 of var. *glaber*.

No one can regret more than I the necessity to abandon for the familiar Beach Pea, known to every observing visitor to our coasts and to the dunes of the Great Lakes, the unusually appropriate and very familiar name *Lathyrus maritimus*. But, unfortunately, this well known plant is the very exceptional victim of a system which in the main is aimed at conservation of established and familiar names, but in this case fails; and if it had been possible, as many hoped could be done, to win sufficient support in the International Congress at Cambridge for conservation of specific names, there would be hope of retaining *Lathyrus maritimus*. In summary, the bibliographic situation, regardless of varieties, is as follows:

Pisum maritimum L. Sp. Pl. ii. 772 (1753).

Lathyrus japonicus Willd. Sp. Pl. iii^2. 1092 (1803).

Pisum dasigynum Raf. Am. Mo. Mag. iv. 194 (1819).

Lathyrus maritimus Bigel. Fl. Bost. ed. 2: 268 (1824), published as a wholly distinct new species, which Bigelow purposely distinguished from *Pisum maritimum* L. (1753), saying: "it has been often taken for the *Pisum maritimum* of Europe. It is, however, decidedly a Lathyrus."

Lathyrus californicus Dougl. in Lindl. Bot. Reg. xiv. t. 1144 (1828).

Orobus maritimus (L.) Reichenb. Fl. Germ. Excurs. 538 (1832).

Lathyrus maritimus (L.) Fries, Fl. Scand. 106 (1835), direct transfer of *Pisum maritimum* L. (1753).

The bibliography should make it clear that Bigelow in 1824 published as a wholly new species, *Lathyrus maritimus*, based on a wholly new type,[1] the plant of the Boston region ("Beach, Dorchester, Chelsea"), and particularly emphasized that the Boston

[1] Bigelow's citation with doubt, of the "*Syn.* Pisum maritimum. *Pursh*?," referred, of course, to the eastern American plant.

plant is not the European *Pisum maritimum* because it is "decidedly a Lathyrus." The circumstance that *Pisum maritimum* L. was later found by Fries to be a *Lathryus* and that in 1835 he published it as *L. maritimus* (L.) Fries in no way changes the fact that the name *L. maritimus* was already preëmpted by Bigelow for a plant which he purposely published as a new and different species. Under the original International Rules it was possible to argue (as some of my most discriminating nomenclatural correspondents have done) that, since Bigelow's plant is *taxonomically* conspecific with *Pisum maritimum*, *Lathyrus maritimus* Bigel. (1824) is *taxonomically* synonymous with *Pisum maritimum* L. and that, therefore, the proper name for the aggregate-species is *L. maritimus* (L.) Fries (1835). Under the International Rules before their alternation at Cambridge such a solution was perhaps possible. But, with the newer emphasis on the TYPE, it becomes clear that Bigelow's name, based on a wholly different type, is not at all a *nomenclatural* synonym of *Pisum maritimum*. Consequently, when Fries, in 1835, transferred *P. maritimum* into *Lathyrus*, the name *L. maritimus* was already preoccupied by a plant *validly published* as a different species, so that there was no place (under the now existing rules) for a *L. maritimus* based on a type different from that of Bigelow. It follows, therefore, that *L. maritimus* (L.) Fries is untenable, while the current citation of the authors of the combination, "(L.) Bigel." very definitely misrepresents Bigelow's intent; and, since two of the phases of the variable species had still earlier and available names, there is no course open, under the existing rules, but to adopt for the aggregate-species the earliest name not preëmpted, LATHYRUS JAPONICUS Willd. (1803).

It may further be stated that, although I am here treating *Lathyrus maritimus* Bigel. (under the name *L. japonicus*, var. *glaber*) as essentially the same as *Pisum maritimum* L. of Europe, there are really slight differences between them—enough so that extreme "splitters" might at any moment maintain that they are different species. Rafinesque, Bigelow, Douglas and Lindley have all done so! The foliage of the American plant averages rather larger than in the European: in the altogether too limited representation of European *L. japonicus*, var. *glaber* before me, the largest leaflets measure 4 cm. long and 2.3 cm. broad and the largest stipules are 2 cm. broad (Hooker says "*Leaflets* 1–2 in."; Gams in Hegi, "2 bis 4 cm lang und ½ bis gegen 2 cm breit"); but in the plant of the New England

coast (*L. maritimus* Bigel. *sen. str.*) the lower leaflets of each leaf are commonly 4–7 cm. long and 2–4 cm. broad, with the stipules up to 3.5 cm. broad. Consequently, although I am not myself separating the coarser, glabrous extremes from temperate Europe and temperate North America, it cannot be said that they are strictly identical. In fact, Nuttall, having var. *glaber* from the Great Lakes and calling it *Pisum maritimum*, said "differs from the European species in having a pubescent legume";[1] whereupon Rafinesque, in a review of Nuttall's work, promptly seized the opportunity: "*Pisum maritimum*, N., is not that of L.; it must be called *P. dasigynum*."[2] The slight difference in the legume emphasized by Nuttall and capitalized by Rafinesque is not constant but when Lindley got hold of material of the coarser glabrous plant of temperate North America he did not hesitate to treat it as a distinct species, *L. californicus* of Douglas's Journal ined. (Lindl. Bot. Reg. xiv. t. 1144), without a suggestion that it is a large development of the Sea Pea of Britain, the North Sea and the Baltic.

In view of the facts that *Lathyrus maritimus* Bigel. was by its author considered a new species, that Rafinesque had previously treated it as a new species, and that Lindley, getting apparently the same plant, also treated it as a distinct species, and in view, also, of the well known tendency of some taxonomists to see "species" where others see only varieties or minor forms, the provision of the revised International Rules is wise, that an earlier specific name cannot be transferred if "the resulting binary combination has been previously and validly published for a different species."[3] *Lathyrus maritimus* Bigel. was the name "validly published" for what Bigelow considered a different species, and it is sufficiently different so that by some other taxonomists it was independently treated as a new species and it may again be taken up as such. At any rate its *taxonomic* reduction is a matter of individual judgment; *nomenclaturally* it is a different species.

The identification of the various specific and varietal names involved in this discussion has, in the main, presented few difficulties; the most difficult is *Pisum maritimum* L. Typical *Lathyrus japonicus* Willd. is clearly the slender glabrous plant of Japan and adjacent

[1] Nutt. Gen. ii. 95 (1818).

[2] Raf. Am. Mo. Mag. iv. 194 (1819).

[3] Art. 58 of the Proposals by the British Imp. Bot. Congr. adopted as Art. 48bis at Cambridge.

coasts, well illustrated by Houttuyn, whose plate was cited by Willdenow. Miquel's *L. maritimus*, var. *Thunbergianus* goes back to the same sources and to a specimen from Thunberg. The identity of Greene's *L. maritimus*, var. *aleuticus* is clear. As I point out in the discussion of it, it is possible that there is an earlier valid name for it in *L. maritimus*, var. *velutinus* Fries; but, as Fries originally published it, this was a *nomen nudum*.

Pisum maritimum L. Sp. Pl. ii. 727 (1753) was a mixture of at least two varieties. The Lapland element, judging from the material at hand from Lapland, was the small and slender, thin-leaved and large-flowered arctic plant which I am treating as *Lathyrus japonicus*, var. *aleuticus*. From this plant Linnaeus presumably derived the *pubescent* character emphasized in his description in Fl. Suec. no. 608 (1745). Most of the references given by Linnaeus in 1753 are to the coarser, glabrous and glaucous plant which grows from Finland and southern Scandinavia to Germany, France and Britain, the "English Sea-Pease" of Ray and other early authors cited by Linnaeus.

Rafinesque's *Pisum dasigynum* rested solely on Nuttall's *Pisum maritimum* from "shores of Lakes Erie, Huron and Michigan" and is consequently the common glabrous-leaved plant of the Great Lakes. Bigelow's description of his *Lathyrus maritimus* (1824) was characteristically complete and it unquestionably belongs to the common plant of "glaucous aspect" of Bigelow's region. This, as already pointed out, may be somewhat coarser than the common European plant, but enough smaller plants are found in America to bridge over the slight difference. *Pisum maritimum*, β. *glabrum* Seringe (1825) was simply and clearly characterisized: "foliis glabris.—In Canada," and can be only the common glabrous plant of eastern Canada.

Phylogenetically *Lathyrus japonicus*, var. *aleuticus*, occurring as a tolerably uniform plant around the arctic and subarctic areas, would seem to be the primitive or ancestral type, which, pushing southward into more temperate conditions, has become modified into the glabrous but thin-leaved *L. japonicus*, var. *typicus* and into the two coarser and heavier-leaved extremes of temperate regions, vars. *glaber* and *pellitus*.

Gray Herbarium.

PICEA GLAUCA, FORMA PARVA

M. L. Fernald and C. A. Weatherby

Picea glauca (Moench) Voss, forma **parva** (Victorin), comb. nov. *P. canadensis*, forma *parva* Vict. Gymnosp. Quebec, 73 (1927).

As demonstrated by Rehder, Rhodora, xvii. 60–62 (1915), the name *Picea glauca* must be used for the White Spruce. *P. canadensis* (Mill.) BSP. was based merely on *Abies canadensis* Mill. Gard. Dict. ed. 8, sp. no. 4 (1768). Except for the English name "*The Newfoundland White Spruce Fir*," the descriptive phrases given by Miller were word-for-word identical with two of the three diagnostic phrases used (or quoted) by Linnaeus in characterizing *Pinus canadensis* L. Sp. Pl. ed. 2, 1421 (1763). In both cases (*Pinus canadensis* L. and *Abies canadensis* Mill.) the Hemlock (*Tsuga canadensis*) and the White Spruce were confused. The first Linnaean phrase (also Miller's first diagnosis) "*Pinus* foliis solitariis linearibus obtusiusculis submembranaceis" clearly belongs to *Tsuga* and was a modification of the diagnosis quoted by Linnaeus from Gronovius: "Abies foliis solitariis confertis obtusis membranaceis." Gronovius gave a good account of the Hemlock and his type, *Clayton*, no. 547, is the type of *Pinus canadensis*, therefore of *Tsuga canadensis*. The last diagnosis given by Linnaeus (and by Miller in 1768) had been borrowed by Linnaeus from Miller's earlier account of the White Spruce, without binomial "Abies foliis piceae[1] brevioribus, conis parvis biuncialibus laxis." The fact that Miller in 1768 took over bodily the two parts of Linnaeus's *Pinus canadensis* and used the same specific epithet (even though he omitted to cite the synonym *Pinus canadensis*) is clear evidence that Miller did not intend to define a new entity; also evidence that he did not understand the species any better than Linnaeus had.

Further evidence that Miller did not really know his *Abies canadensis* (which consisted of two generic elements) is afforded by his statement: "The fifth sort [his *Abies Mariana* or '*Black Spruce Fir of North America with very small cones*'] . . . . rarely arrives to the size of the fourth [his bigeneric *Abies canadensis*]: however, the inhabitants of America use the branches of both indifferently in making of Spruce-beer, from whence the trees obtained the title of Spruce-trees."

Now, everyone who, like the senior author, grew up in a spruce region, knows that the White Spruce is never used for making beer, having a disgusting odor and flavor, whence the colloquial names "Skunk Spruce" and "Cat Spruce"; but that the chief ingredient of spruce beer is the branchlets of either *Picea mariana* or *P. rubens*,

[1] Referring to *Pinus Picea*, or *Picea Abies*, the Norway Spruce.

both known in the woods indiscriminately as "Black Spruce." This fact has long been recognized by those who know the northern forests. Thus, the younger Michaux, recording for the Black Spruces (as *Abies nigra*) the Canadian name "Épinette à la bière" said "C'est avec les jeunes branches de l'*Abies nigra* et préférablement avec celles de la variété dite *Black Spruce*, Sapinette noire, qu'on fabrique la bière connue sous le nom de bière de spruce, *spruce beer*"[1]. But, referring to earlier misconceptions, he stated of the White Spruce (his *Abies alba*): "Je puis également affirmer, ... que ce n'est pas avec les rameaux de cette espèce que se fabrique la bière de spruce, puisqu' au contraire, on évite soigneusement de s'en servir, parce que lorsque ses feuilles sont froissées elles répandent une odeur fort et désagréable que se communique, dit-on, à la liqueur."[2] Similar explicit statements are given by others who know the making of spruce beer.

It is, therefore, evident that Miller's *Abies canadensis* was both the Hemlock and the White Spruce, and that he ascribed to it, furthermore, the properties of the Black Spruce. As an illustration of a *nomen confusum*, no better example could be found.

Gray Herbarium.

Suksdorf's "Untersuchungen in der Gattung Amsinckia."[3]—Another praiseworthy contribution to the literature of systematic botany has recently been published by the veteran Washington botanist, Mr. W. N. Suksdorf of Bingen, Washington. This one, also written in German, as is the author's custom, is a detailed monograph of the difficult genus *Amsinckia*. Descriptions of two hundred and thirty species are included, and an unusually large number of novelties is proposed; altogether these number one hundred and ninety-two, all but thirty of which are from California, the area, apparently, in which the genus reaches its greatest development. There is one new nomenclatorial combination. The remainder of the new species are from Yukon, British Columbia, Washington, Oregon, Idaho, Utah, Nevada, Arizona, New Mexico, Lower California, and two species from South America. By publishing this paper before January 1, 1932, the author has avoided the necessity of writing a Latin summary for his proposed new species.

It is evident that the author is not entirely free from some misgivings in regard to the large number of new species described, and he suggests that such a number is likely to arouse suspicion as to the merit of his work.

[1] F. A. Michaux, Hist. Arb. Forest. de l'Am. Sept. i. 131 (1810).

[2] F. A. Michaux, l. c. 136 (1810).

[3] Werdenda $1^{5, 6, 7, 8}$: 47–114, 1931 (December 31). Published by the author at Bingen, Washington. Price $1.00.

He states, however, that from his point of view, the subject lends itself to no other interpretation. To quote a few sentences from the introduction: "Der Formenreichtum der Gattung Amsinckia übertraf alle meine Erwartungen. Mein Arbeit wird wohl keinen Botaniker befriedigen; ich selbst bin auch nicht damit zufrieden; glaube aber sie wird dahin führen, dass wir bald die Gattung besser verstehen werden. Die grosse Zahl der neuen Arten spricht nicht günstig für meine Arbeit, denn sie wird Misstrauen erregen. Die Sache liess sich aber nicht anders machen, nach meiner Ansicht."

The genus is divided into the four subgenera, Muricatae, Microcarpae, Tessellatae, and Vernicosae, chiefly on the basis of fruit characters, namely, of size, shape and sculpture of the nutlets, and on the number and arrangement of the vascular bundles of the corolla. For some of the subdivisions, the character of the position of the stamens, whether high or low on the corolla, is used.

Dr. Asa Gray, in the Synoptical Flora in 1886, recognized only six species and two varieties of *Amsinckia*. Macbride, in 1917, characterized twenty-one species.[4] In that work Macbride states: "Altogether *Amsinckia* is the most perplexing group I have studied and I can only hope that this effort to define its natural components may lead to careful field-work by some one who may then be in a position to prove or correct my interpretation. It is conceivable, with the better understanding gained from field-observation of specific limitations within the group, that it will be found to consist of many more species than the twenty-one here recognized." Perhaps no one is in a better position than Suksdorf to carry on the work of further elucidating this genus. During the last twenty years his attention has been focused on *Amsinckia*. In his garden at Bingen he has cultivated many species and thus has had the opportunity of studying them closely in the living condition. He has collected Amsinckias in many parts of western United States, principally in Washington and California; indeed, some of his first collections of specimens of the genus were made in the latter state as early as 1875, when he was a student at the then very new University of California. For his monograph he has had the benefit of collections of *Amsinckia* from the Gray Herbarium of Harvard University, the University of California, the California Academy of Sciences, the State College of Washington, and those from his own very extensive herbarium at Bingen.

Though it is not to be expected that the results of Suksdorf's work will be accepted *in toto* by all botanists, yet the monograph is one that will merit careful consideration by all serious students of the Boraginaceae.—George Neville Jones, State College of Washington, Pullman, Washington.

Abies balsamea (L.) Mill., forma **hudsonia** (Bosc), comb. nov. *Picea Fraseri*, var. *hudsonia* (Bosc) Knight & Perry, Syn. Conif. Pl. 39 (1850). *A. hudsonia* Bosc ex Knight & Perry, l. c. in syn. (1850). *A. Fraseri* (B) *nana* Lindl. & Gordon, Journ. Hort. Soc. Lond. v. 209 (1850), based on "*Pinus hudsonica*" of Gardens (presumably a

[4] Macbride, J. Francis, A Revision of the North American Species of Amsinckia. Contrib. Gray Herbarium of Harvard University, 49, n. s.: 1–16, 1917.

misprint for *Abies hudsonia*). *A. Fraseri*, var. *Hudsoni* Carrière, Traité Gén. Conif. 200 (1855). *A. Hudsoni* Hort. acc. to Carr. l. c., in syn. (1855). *A. balsamea Hudsonica* Veitch, Man. Conif. 83 (1881), wrongly ascribed to Engelm. *A. balsamea prostrata* Hort. acc. to Veitch, l. c. in syn. (1881). *A. balsamea* [var.] *hudsonia* Sarg. Sylva, xii. 109 (1898), erroneously ascribed to Engelm.

The dwarf, prostrate extreme of *Abies balsamea* is certainly only a depressed *form*, a response to bleak habitats, quite parallel with the dwarf forms in *Picea* and other groups.—M. L. Fernald and C. A. Weatherby.

Druce's Comital Flora.[1]—The venerable Dr. Druce was the most intense student of the local occurrence of the vascular plants in Great Britain. His many county floras and his somewhat single-handed and often dictatorial editing of the local records published in the Reports of the Botanical Society and Exchange Club of the British Isles are familiar to many American botanists. In spite of the patent triviality and the quibbling character of many of the published items (such as a dignified scientific journal would scarcely wish to publish), their real meat was thoroughly digested by the Editor; and he was alert, to an extent probably unparalleled, to carry on extensive local botanizing and to follow up the discoveries of others. In his own words "A new record was not to be sneered at but was a real joy."

Druce's last extensive work was the preparation of The Comital Flora of the British Isles, "being the Distribution of British Plants . . . throughout the 152 Vice-Counties of Great Britain, Ireland, and the Channel Islands, with the Place of Growth, Elevation, World-Distribution, Grade, Chief Synonyms, and First Names by which the Plants were recorded as British, . . . with an original Coloured Map showing the Botanical Vice-Counties presented by WILLIAM JAMES PATY, Esq." This final and very useful book of Druce's was never seen by him in its finished form, for, as his close friend and publisher, Mr. Costorphine, writes in a personal letter, "it was issued on the day of his death." The book, then, is a most appropriate monument to a life of intense activity and devotion to the recording of local data on the British flora.

The volume will not appeal to those who look for continuous reading and logical development of a theme or for a philosophic consideration of the facts recorded. After historical and explanatory introductory matter it becomes completely matter-of-fact and, until it is understood, cryptic. It is comparable with a railroad timetable or with stock-market reports, though a trifle more satisfying than the latter. As a sample (selected for its brevity and because the plant is familiar to most readers of Rhodora) take

660.—LIPARIS Rich.

1.—L. Loeselii (L.) Rich.

Uliginal. Germanic. Fenny bogs, damp hollows in sand-dunes. Rare. P. Lowland.

[1] George Claridge Druce. The Comital Flora of the British Isles. *T. Buncle & Co.*, Market Place, Arbroath. 1932. *Price* 20 s.

Europe, N. and C.; Italy; Russia, S.; Amer. N.

Eng. 7.

25, 26, 27!, 29!, 31, 41!, 44!.

Two forms occur—the uliginal and the dunal.

Orchis lilifolius . . . In the watery places of Hinton & Teversham Moors.—Ray Cat. Cant., 106, 1640.

The numbers, translated, mean that *Liparis Loeselii* is found in 7 of the 152 vice-counties of England; the succeding numbers (25, 26, 27, etc.) that these 7 vice-counties are East Suffolk, West Suffolk, East Norfolk, etc.

Thus condensed and carefully organized in the book we have a vast amount of detail, such as is possible only in a country which has been extensively botanized. The subdivisions of Britain into botanical vice-counties, quite regardless of political divisions, has long been practiced and was extensively elaborated by Hewett C. Watson in his famous Topographical Botany (1870). This new and much fuller development of the same condensed method of recording innumerable items is here noted because it has long seemed to the reviewer that something of the sort would be most useful in New England. Our knowledge of much of the area, like the "Maine Woods," for instance, is too limited for such treatment; but a region like Cape Cod, with the well defined Upper, Middle and Lower Cape, or Coös County, New Hampshire, with the acid or subacid alpine, subalpine and wooded mountain regions and with the sharply differentiated calcareous low area to the north, give suggestions for a proper segregation into vice-counties which have a real significance. Without further expanding upon the desirability of some such work in America, the Comital Flora of Druce is highly recommended to students of local floras as a model to be closely studied.—M. L. F.

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